

The mean of the quantities tabulated in the last column is $+ 0''.09$. Only one-half of this difference affects the flexure, so that the difference in the horizontal flexure obtained by taking the observations through the cube instead of with the transit circle raised is only $+ 0''.045$.

Observations of Occultations of Stars during the Total Eclipse of the Moon on 1895 March 10, made at the Royal Observatory, Greenwich.

(Communicated by the Astronomer Royal.)

The night was very clear till after totality ended, so that altogether 139 occultations of stars were recorded by eleven observers: twelve of these are bracketed as being presumably erroneous, five of them are solitary observations of the disappearance of 10th or 11th magnitude stars, and the times of disappearance of two stars were noted by only two observers, and as there was a discordance of several seconds between them no reliable mean could be taken. Omitting these, there are 120 good observations of disappearance or reappearance.

The observers and instruments used are given in the following table:—

Observer's Initials.	Observer's Name.	Instrument.	Aperture. in.	Power.	Clock used.
D.	Mr. Dyson	Merz Equatorial	13	220	Dent 1793
L.	Mr. Lewis	28-inch Equatorial	28	200	Dent 2009
H.	Mr. Hollis	{ Guiding Telescope of Astrographic Equatorial }	10	225	Dent 2017
A.C.	Mr. Crommelin	Sheepshanks Equatorial	6.7	55	Earnshaw
B.	Mr. Bryant	Altazimuth	4	100	Graham I.
G.E.N.	Mr. Niblett	Corbett Equatorial	6	200	Dent 2009
A.E.	Miss Everett	{ Simms' Portable Telescope, No. 1 }	4	60	Arnold 84*
H.F.	Mr. Furner	{ R. O. Detached Telescope, No. 1 }	4	60	Appleton 484*
C.D.	Mr. Davidson	{ R. O. Detached Telescope, No. 2 }	4	60	Loseby 111*
D.E.	Mr. Edney	{ R. O. Detached Telescope, No. 3 }	4	60	Kullberg 5226*
J.	Mr. Johns	Astrographic Equatorial	13	...	Dent 2017

* Chronometer.

The Corbett equatorial was on the same mounting as the 28-inch.

H. F. observed from the leads just south of the Sheepshanks equatorial.

C. D. and D. E. observed from the roof of the new Physical Observatory.

A. E. observed from the roof of a house, No. 18 The Circus, Greenwich, 500 yards due west of the transit circle.

Seven stars were observed both at disappearance and re-appearance, the number of independent measures of chords available for determination of the Moon's diameter being 49. Unfortunately all of these are considerably to the north of the Moon's centre.

The results of the observations are given in the table below. The first column gives the name of the star, the second its magnitude. The letter in the third column indicates whether a disappearance or a reappearance was observed. The next ten columns give the seconds of Greenwich mean time of disappearance or reappearance, according to the ten observers stationed in the Royal Observatory. The next column gives the concluded mean time of the phenomenon. The last column gives the seconds of Greenwich mean time according to Miss Everett, who observed from the roof of a house (No. 18 The Circus, Greenwich) 500 yards due west of the transit circle. The corrections required to reduce her observations to those made in the Observatory are $+0^s.43$ for 83 *Leonis* (D) and $+0^s.06$ for W.B. XI. 365 (R). The correction has not been computed for the other observations.

Star's Name.	Mag.	D.	L.	H.	Seconds of G.M.T. by different observers.				C. D.	D. E.	J.	Concluded G.M.T.			Seconds of G.M.T. by A. E.
					A. C.	B.	G. E. N.	H. F.				h	m	s	
82 Leonis	6.9	D.	34.9	38.7	...	...	...	...	...	...	...	13	34	...	...
83 Leonis	6.9	D.	28.2	28.0	28.3	28.3	28.8	29.3	28.7	28.3	28.0	14	17	28.42	27.5
Pi. XI. 71	8.1	D.	6.4	6.2	6.6	6.7	6.2	(8.3)	7.0	6.4	6.8	14	18	6.52	(46.2)
Anon. <i>a</i>	10	D.	...	56.4	...	...	...	...	...	...	...	14	44	56.4	...
τ Leonis	5.2	D.	18.8	19.1	19.1	19.5	18.8	19.2	20.4	19.4	19.4	14	56	19.27	19.3
W.B. XI. 349	8.0	D.	32.4	32.8	33.0	32.9	(31.8)	32.0	33.3	33.5	32.8	14	56	32.84	32.8
Anon. <i>b</i>	10	D.	...	46.9	...	...	...	...	...	...	...	14	58	...	...
Anon. <i>c</i>	10	D.	24.0	...	...	...	...	...	...	...	...	15	4	24.0	...
83 Leonis	6.9	R.	6.8	6.3	6.9	6.8	(5.3)	6.1	7.5	7.5	5.9	15	12	6.70	6.7
Pi. XI. 71	8.1	R.	8.8	9.2	9.9	9.9	...	10.1	10.3	10.4	9.0	15	13	9.69	10.0
W.B. XI. 365	7.9	D.	39.8	39.1	39.5	39.5	(36.5)	39.1	39.7	39.7	39.0	15	13	39.37	39.3
B.D. + 3° 2501	9.5	R.	...	0.7	...	...	...	(2.1)	...	...	...	15	18	0.7	...
Anon. <i>d</i>	10	D.	42.0	...	...	...	...	...	...	...	...	15	20	42.0	...
Anon. <i>a</i>	10	R.	27.9	...	...	...	...	...	...	...	...	15	29	27.9	...
Anon. <i>e</i>	10	D.	43.4	...	...	...	...	...	...	...	...	15	29	43.4	...
W.B. XI. 372	8.8	D.	20.8	21.3	21.0	21.7	21.4	21.7	21.8	22.5	21.3	15	35	21.47	21.3
τ Leonis	5.2	R.	52.9	52.7	52.7	53.2	...	51.9	53.4	53.4	52.9	15	43	52.89	53.4
W.B. XI. 349	8.0	R.	(27.9)	24.7	24.8	25.2	...	25.0	25.7	25.4	25.3	15	47	25.07	25.3

Star's Name.	Mag.	Seconds of G.M.T. by different observers.					Concluded G.M.T.			Seconds of G.M.T. by A. E.
		A. C.	B.	G. E. N.	H. F.	C. D.	D. F.	J.	h m s	
B.D. + 3° 2510	9.4	D.	L.	H.	s	s	s	s	(28.4)	15 57 39.76
W.B. XI. 365	7.9	R.	...	21.8	22.6	22.3	22.5	22.5	22.3	15 58 22.30
W.B. XI. 372	8.8	R.	...	(37.2)	30.0	30.1	30.6	...	25.6	16 9 30.17

Notes.

82 Leonis.—This star disappeared at the Moon's bright limb. All the other phenomena were at the eclipsed limb.

83 Leonis (D.)—A. E.'s time has been diminished 10".

Pi. XI. 71 (D.)—A. E. noted that her count of seconds was almost certainly erroneous. H. F. noted observation doubtful; wind shook instrument.

Anon. *a* (D.)—Angle from Vertex towards East 45°.

τ Leonis (D.)—D. E. noted that his count of seconds was probably one second in error.

W.B. XI. 349 (D.)—D. E. noted that his count of seconds was probably one second in error.

Anon. *b* (D.)—Angle from Vertex towards East 80°.

83 Leonis (R.)—C. D. noted that the star was on the edge of field.

Pi. XI. 71 (R.)—B. was doubtful if his count of seconds was correct. A. E.'s time has been diminished 10".

W.B. XI. 365 (D.)—D. noted that his count of seconds was possibly in error.

B.D. + 3°, 2501 (R.)—H. noted did not appear suddenly. H. F. noted probably late, star very faint. H. F.'s time has been diminished 1".

Anon. *d* (D.)—Angle from Vertex to East 105°.

Anon. *e* (D.)—Angle from Vertex to East 45°.

W.B. XI. 372 (D.)—D.'s time has been increased 10". A. C. and A. E. both noted that this star appeared projected on the Moon's limb before disappearance.

τ Leonis (R.)—A. E.'s count of seconds interfered with by a clock striking.

B.D. + 3°, 2510 (D.)—A. C. and J. both noted the observation as doubtful; they appear to have lost sight of the star before it reached the limb.

W.B. XI. 365 (R.)—H.'s time has been diminished 1". D. E. noted that his count of seconds was probably half a second in error. J.'s time has been diminished 10".

W.B. XI. 372 (R.)—L. noted that his count of seconds was probably six or seven seconds in error.

Observations of Contacts with Shadow.

Phenomenon.		Observer.	G.M.T.		
			h	m	s
First Contact with Shadow		A. C.	13	55	4
		B.	13	53	23
Beginning of Totality		A. C.	14	52	5
		B.	14	51	55
		H. F.	14	52	6
End of Totality		A. C.	16	25	13*

Royal Observatory, Greenwich :
1895 March 26.

Observations of Occultations of Stars during the Total Lunar Eclipse of 1895 March 10 at the Radcliffe Observatory, Oxford.

(Communicated by E. J. Stone, M.A., F.R.S., Radcliffe Observer.)

The following occultations were observed by Mr. Wickham with the 10-inch Barclay equatorial, using power 90 and solar chronometer; and by Mr. Robinson with the 7.5-inch heliometer, using power 80 and sidereal clock. The night was exceptionally fine.

Name of Star.	Mag.	Phenomenon.	Time noted.			G.M.T. of Observation.			Observer.
			h	m	s	h	m	s	
83 Leonis	7.5	Disappearance	14	17	33.3	14	15	32.1	W.
"	"	"	13	23	49.0	14	15	32.3	R.
Piazzi XI. 71	8.0	"	14	18	11.25	14	16	10.0	W.
"	"	"	13	24	27.0	14	16	10.2	R.
τ Leonis	5.0	"	14	56	24.9	14	54	23.4	W.
"	"	"	14	2	46.3	14	54	23.2	R.
W.B. XI. 349	8.2	"	14	56	42.9	14	54	41.4	W.
"	"	"	14	3	4.5	14	54	41.4	R.
83 Leonis	7.5	Reappearance	15	13	8.8	15	11	7.1	W.
"	"	"	14(19)	32.5		15	11	6.6	R.
Piazzi XI. 71	8.0	"	15	14	12.0	15	12	10.4	W.
"	"	"	14(20)	35.9		15	12	9.9	R.
Arg. Z. + 3°, 2501	9.5	"	15	18	32	15	16	30.3	W.
W.B. XI. 372	8.8	Disappearance	15	35	26.3	15	33	24.5	W.
"	"	"	14	41	54.25	15	33	24.7	R.
τ Leonis	5.0	Reappearance	15	45	6.3	15	43	4.4	W.
"	"	"	14	51	35.6	15	43	4.4	R.
W.B. XI. 349	8.2	"	15	48	35.8	15	46	33.9	W.
W.B. XI. 372	8.8	"	16	10	59.8	16	8	57.7	W.

* Rough observation; cloudy.